

### **AMENDMENT TO THE TITLE**

Please replace title “Multi-Functioned Wafer Aligner” with title “Multi-Functioned Wafer Aligner and method for positioning a wafer and detecting wafer damage.”

### **REMARKS**

Claims 1-10 are pending in this application. Claims 1-10 were rejected. Claim 2-6 were objected to. Claims 1-8 and 10 have been amended. Claim 9 has been cancelled. The Examiner’s reconsideration of the rejection is respectfully requested in view of the above amendment and the following remarks.

Applicant gratefully acknowledges the Examiner’s indication that claims 2-6 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### **Title Objection**

The title of the present invention is objected to for the reasons set forth on page 2 of the Office Action. In response, Applicant has amended the title to address the issues raised by Examiner even though Applicant believes that the title “Multi-Functioned Wafer Aligner” is clearly indicative of the invention. Accordingly, the withdrawal of the title objection is respectfully requested.

### **Drawing Objections**

The drawings are objected to for the reasons set forth on page 2 of the Office Action. Examiner pointed out that the drawings does not show “reflected rays from the wafer” as claimed in the present invention. In response, Applicant amended claim 2 to cancel the features from the claim. Examiner also pointed out that the drawings does not show “an embodiment having an array of luminous emitters and an array of luminous emitters on the front and back side” as claimed in the present invention. In response, Applicant amended claim 5 to cancel the features of the claim. Accordingly, the withdrawal of the drawing objections is respectfully requested.

### **Rejections under 35 U.S.C. § 112:**

Claims 2-6 stand rejected under 35 U.S.C. § 112, first paragraph, on the grounds that the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims, for the reasons set forth on page 2 of the Final Office Action.

The Examiner pointed out that the specification does not reasonably provide enablement for making “an array of multiple photo detecting sensors that is disposed opposite to an array of emitters, receives reflected rays from the wafer to detect a wafer position.” The Examiner stated that “the wafer acts to block the emitters and the photo detecting sensors receive transmitted rays that are not blocked by the wafer.” In response, Applicant has amended claim 2 to address the issues raised by Examiner.

Examiner also pointed out that “the phrase ‘such as’ renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed

invention.” In response, Applicant has amended claim 1 to address the issues raised by Examiner and to more clearly recite the invention.

Examiner also pointed out that “it is unclear how a wafer rotator is related to the rest of the invention.” In response, Applicant has amended claims 1 and 2 to address the issues raised by Examiner.

Examiner also pointed out that “it is also unclear how the emitters and the incident rays are related to the reflected rays.” In response, Applicant has amended claims 1 and 2 to address the issue raised by Examiner.

Applicant respectfully submits that the specification in the invention has provided sufficient direction to a skilled artisan to make the claimed invention without undue experimentation. Applicants, therefore, respectfully submit that the rejection under 35 U.S.C. § 112, first paragraph, be withdrawn.

**Rejections Under 35 U.S.C. § 102:**

Claims 7-9 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,062,084 to Chang for the reasons stated on page 4 of the Office Action.

Amended claim 7 is not disclosed nor suggested by Chang.

Claim 7 recites, *inter alia*, “a wafer damage detector comprising an array of damage-detecting sensors adapted to receive light emitted from said luminous source that is reflected off of the edge of said wafer.”

Chang discloses a wafer damage detector having a laser emitter and a laser receiver. However, the laser emitter (62) and the laser receiver (64) are positioned to receive direct laser source, as shown in Figs. 5A and 5B. Therefore, Chang does not

disclose nor suggest “an array of damage-detecting sensors adapted to receive light emitted from said luminous source that is reflected off of the edge of said wafer ,” as essentially claimed in claim 7.

Claims 7-8 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,851,102 to Okawa for the reasons stated on page 4 of the Office Action.

Claim 7 is not disclosed nor suggested by Okawa.

Okawa discloses a detector (5), a light source (51), and a CCD linear sensor (52) opposed to the light source with the wafer interposed therebetween. (Col. 3, lines 10 - 20). Because of the interposed wafer, the CCD sensor opposed to the light source cannot receive reflected sources, as claimed in claim 7. Thus, Okawa neither discloses nor suggests a luminous source that is reflected off of said wafer edge.

Accordingly, neither Chang nor Okawa anticipate or render obvious claim 7. Claim 8 depends from claim 7. The dependent claim 8 is believed to be allowable due to its dependency on the allowable independent claim. The Examiner’s reconsideration of the rejection is respectfully requested.

#### **Rejections Under 35 U.S.C. § 103:**

Claim 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Chang for the reasons stated on page 5 of the Office Action.

Amended claim 1 is directed to a multi-functioned wafer aligner comprising a multi-functioned unit and a main processor. The multi-functioned unit of claim 1 comprises an array of damage-detecting sensors for receiving the incident rays reflected from an edge of the wafer to detect wafer damage.

Chang discloses a multi-functional unit performing wafer damage detection (Col. 5, lines 45-52). However, the laser emitter (62) and the laser receiver (64) are positioned to receive direct laser source, as shown in Figs. 5A and 5B. Chang neither discloses nor suggests an array of damage-detecting sensors for receiving the incident rays reflected from an edge of the wafer to detect wafer damage, as essentially claimed in claim 1.

Accordingly, claim 1 is believed to be patently distinguished and not rendered obvious by Chang. The Examiner's reconsideration is respectfully requested.

Claim 10 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Chang for the reasons stated on page 6 of the Office Action.

Claim 10 is directed to a method for positioning a wafer and detecting wafer damage. The method for detecting wafer damage provides "an array of damage-detecting sensors adapted to receive light emitted from said luminous source that is reflected off of said wafer edge," as essentially claimed in claim 10.

Chang discloses a method for detecting defects in a wafer edge but does not disclose or suggest "providing an array of damage-detecting sensors adapted to receive light emitted from said luminous source that is reflected off of said wafer edge," as essentially claimed in claim 10. In Chang, laser emitter (62) and laser receiver (64) are positioned to receive direct laser source, as shown in Figs. 5A and 5B.

Accordingly, claim 10 is believed to be patently distinguished and not rendered obvious by Chang. The Examiner's reconsideration is respectfully requested.

### CONCLUSION

For the foregoing reasons, the present application, including claims 1-8 and 10, is believed to be in condition for allowance. The Examiner's early and favorable action is respectfully requested. The Examiner is invited to contact the undersigned if he has any questions or comments in this matter.

Respectfully submitted,



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Attachments